

## **RFR # DFW-2018-036:**

### **Status of Historic Little Brown Bat Colonies in Massachusetts**

#### **Introduction**

A chief function of the Natural Heritage & Endangered Species Program (NHESP) of the Massachusetts Division of Fisheries and Wildlife (MassWildlife) is to work toward the conservation of native plant and animal diversity in the Commonwealth, especially with respect to rare or otherwise vulnerable species. To achieve conservation objectives for those species and manage their populations effectively, MassWildlife must have a thorough understanding of their statewide distributions and abundances. To prioritize conservation and management actions, MassWildlife must also have local-level information about population ecology.

As a result of the catastrophic mortality caused by White-nose Syndrome (WNS), all species of cave bats have been listed as Endangered in the state of Massachusetts. While hibernacula surveys have indicated that Massachusetts' wintering bat populations had been slowly increasing for the last half-century, the introduction of the fungus that causes WNS resulted in greater than 99% mortality of the bats in Massachusetts hibernacula in just two years. Before WNS, Little Brown Bats (*Myotis lucifugus*) were the most common bat species in the state. However, since the onset of WNS in Massachusetts, the state's population of Little Brown Bats has dwindled to less than 1% of what it once was.

Bat mortality linked to WNS at winter hibernacula consequently affects bat activity levels at their summer roost sites. Since Little Brown Bats were one of the species most affected by WNS in Massachusetts, MassWildlife is interested in documenting the post-WNS status and abundance of this species. Statewide acoustic surveys conducted by the Massachusetts Department of Transportation in the summer of 2015, in addition to survey efforts funded by MassWildlife through a Competitive Section 6 Funding Opportunity in 2016 and 2017, have documented the continued existence of Little Brown Bats in pockets throughout the state. However, no focused effort has been made to survey historic sites with prior known Little Brown Bat colonies.

Through this study, MassWildlife seeks to visit sites with known historic Little Brown Bat colonies to determine the presence or absence of this species post-WNS. Locating Little Brown Bat colonies will help describe the new post-WNS baseline status for this once abundant bat species. Once colonies are located, efforts can be made to secure their protection and monitor their productivity. Knowing the location, size, and productivity of the remaining Little Brown Bat colonies will greatly benefit conservation efforts and help facilitate their recovery. To achieve conservation objectives for Little Brown Bats and manage their populations effectively, MassWildlife must have an understanding of their post-WNS distributions and abundance compared to their historic range and populations.

## **Specific Tasks**

The Applicant will:

- 1) Conduct site visits to as many known historic Little Brown Bat colony sites as time permits.

## **Study Area**

Surveys may be conducted throughout Massachusetts, but will likely focus on the central and western parts of the state. Specific sites to be surveyed will include locations based on historic information available to MassWildlife dating back to 1960.

## **Methods**

**Site Visits:** Site visits will be conducted to as many known historic Little Brown Bat colony sites as time permits between 15 May and 31 July 2018, focusing on the pregnancy and lactation periods of this species. Surveys will be conducted at locations where Little Brown Bats are present to gather data on the colony size, roost characteristics, surrounding habitat, and productivity. These surveys will allow for a better understanding of the abundance and distribution of Little Brown Bats across Massachusetts post-WNS.

**Emergence Counts:** Emergence counts will be conducted, when appropriate and as time permits, at locations with Little Brown Bats present to determine the number of bats using each roost location. A consistent and accurate population count will allow the state to track annual population size fluctuations and the reproductive success of each colony compared to pre-WNS data.

**The Contractor shall maintain in regular communication with MassWildlife regarding survey results and/or challenges faced in the field so that an adaptive sampling scheme can be employed.**

## **Materials**

MassWildlife will provide (as needed):

- 1) List of historic sites to visit and survey.

The Applicant will provide (as needed):

- 1) His/her own transportation to and among sites.
- 2) Appropriate field apparel.
- 3) Formatted Microsoft Excel spreadsheets for reporting survey data.
- 4) GPS unit (may be a cell phone app) and field maps.
- 5) Weatherproof field notebook.
- 6) Any other equipment or materials desired by the Applicant.

## **Deliverables**

A Final Report Package detailing the survey results shall be prepared and submitted electronically on a USB flash drive to MassWildlife by **Friday, October 5, 2018**.

The Final Report Package shall contain the following:

- 1) An original, signed attestation statement from the Applicant certifying that the information contained in the deliverables is true and complete to the best of his/her knowledge (attestation form to be provided by MassWildlife; a copy of the signed statement must accompany the USB submitted).
- 2) A short summary of the survey results.
- 3) An electronic copy of Microsoft Excel spreadsheets containing all survey data.
- 4) Electronic submittal of all MESA listed species into VPRS (NHESP's web-based mapping and data submittal application for reporting rare species observations). NHESP will provide instructions for using VPRS.

**Total Funding Available:** Up to **\$5,000.00**

One applicant will be selected to receive funding, based on their capacity to implement the proposed project and provide a timely report of results.

**To apply, please provide the following information:**

- 1) Project summary: 2-3 sentences
- 2) Qualifications of project leader and/or sponsoring organization
- 3) Brief project scope and methods
- 4) Brief project budget with justification

**Please limit application to no more than 3 pages, including budget.**

## **Bid Due Date**

Bids must be received by DFW by **Friday, April 6, 2018 at 9:00 AM**.

## **Instructions for Submission of Responses**

Submit proposals via the Commonwealth's Online Procurement System – CommBuys, at <https://www.commbuys.com/bsa/>. For application questions, please contact Karen M. Dolan, Finance & Projects Administrator, NHESP at 508-389-6349 or at [karen.dolan@state.ma.us](mailto:karen.dolan@state.ma.us).

**For more specific project information, please contact Thomas W. French, Assistant Director, DFW, at 508-389-6355 or at [tom.french@state.ma.us](mailto:tom.french@state.ma.us).**